

31st December, 1961.

Dear Jacques,

I enclose a brief screed on the DNA story. I found it very hard to write. It really needs a lengthy review, but I have made it only a sketch. This is particularly true of the work since 1953, the volume and complexity of which has defeated me. Nor have I dealt with work "inspired" by the DNA structure, such as Benzer's work, and all the ideas on coding, including our latest paper.

I hope it is not far from the sort of thing you wanted. It really is most kind of you to take all this trouble on our behalf.

On the matter of Maurice Wilkins. I think his contribution was twofold. He indicated the careful x-ray work on DNA, and since 1953 he has done numerous extensive, accurate and painstaking studies on it. It is true that he has worked rather slowly, but then hardly anybody else has done anything. However, the data which really helped us to obtain the structure was mainly obtained by Rosalind Franklin, who died a few years ago. It should also be remembered that for a whole year Jim and I tried to get Maurice to solve the structure by our approach, without success. It was only after we learnt of Paulings structure that we asked and obtained Maurice's permission to work on the problem. Nevertheless, for the last eight years Maurice has done all the hard work on the problem and that should be recognised.

Though I expect it is outside your brief I am always slightly surprised that people do not refer more to our ideas on virus structure. The idea of subunits in "spherical" viruses had been suggested before, but it had made no impression. All the modern X-ray work on viruses came about because of our influence, including Rosalind Franklin's excellent work on TMV, which was based on Jim's evidence that the structure was helical. In recent years the e/m work has

has confirmed and extended our ideas (see a recent review in virology by Horne and *Smehne* ), especially the suggestion of 5-fold symmetry, which was quite original. The basic reason for subunits - that the information the RNA could carry is limited - was also quite original. At the time it even seemed daring! How times change.

The MRC have now agreed that I can be associated with the Institute of Biology by the device of employing me "part-time", and adjusting my salary. I have written unofficially to Jonas, and when I have it on paper from the MRC I will write more formally. The papers I have been sent so far are all old stuff.

Do let me know as soon as possible about the proposed Paris meeting. Incidentally, my home telephone number is Cambridge 57163, not 57613!

With best wishes,

F. H. C. Crick.

*P.S. Reprints follow shortly.*